# *Interoperability Testing and Certification Authority (ITCA) Development Guide and Frequently Asked Questions*

**THE SGIP**

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## Contents

# 1   Introduction

The Smart Grid Testing and Certification Committee (SGTCC), a standing committee of the Smart Grid Interoperability Panel (SGIP) has responsibility to establish a framework for testing and certification to be used in enabling standards based interoperability of Smart Grid systems and devices.

The SGTCC has issued an Interoperability Process Reference Manual (IPRM) that introduces key testing and certification processes necessary to achieve interoperability in a consistent manner over time. The IPRM is intended for use by an organization whose function is to promote and facilitate the introduction of interoperable products to the market place based on a Smart Grid standard.  These organizations are referred to by the SGTCC as Interoperability Testing and Certification Authorities (ITCA).

The SGTCC envisions that over time, many of the standards included in the SGIP Catalog of Standards will have associated testing and/or certification services overseen by an ITCA. New ITCAs are just beginning to emerge, and the SGTCC has noted that there is a need to provide guidance to these organizations to help them develop and implement programs that align with the expectations cited in the IPRM.

In setting up and operating an ITCA, there are a series of activities and responsibilities that are addressed specifically or implied in the IPRM, most of them enumerated in a separate section.  This document is intended to organize the IPRM explicit and implicit requirements and suggested best practices for an ITCA into a roadmap to follow in launching its program.

# 2   ITCA Test and Certification Tasks Based on the IPRM

According to the IPRM Version 2:

> *An Interoperability Testing and Certification Authority (ITCA) is the program*
>
> *management organization, providing oversight for testing and certification*
>
> *activities associated with one or more standards or specifications, that takes*

> *responsibility to insure that interoperable products within the scope of the*
>
> *specific ITCA program are brought to market. The ITCA coordinates the*
>
> *participation of certification bodies and test labs for its program.*

The following are the tasks that an ITCA will need to complete as part of its goal to conform to the IPRM Version 2.

## 2.1 Organize the ITCA (Implied Tasks)

A. Develop a business plan for the ITCA

1. Determine the level of conformance to the IPRM that the ITCA will aspire to implementing, including independent ISO/IEC 65 and ISO 17025 certification requirements

2. Establish charter, scope and legal framework, including legal documents as needed

3. Establish Governance policies and procedures

4. Determine and organize ITCA budget and Treasury functions

5. Determine staff support requirements and resources available

6. Determine overall budget and schedule for a prudent period of time (3-5 years)

B. Intellectual Property Rights (IPR) Policy development and implementation

C. Recruit members who can contribute both financial and staff resources

D. Set sponsorship and dues levels or acquire other sources of funding

E. Select leadership

F. Establish meeting and working protocols

## 2.2 Manage and Promote the Standard (Implied tasks)

A. Recruit vendors and customers to adopt and to use the standard upon which the ITCA program is based

B. Continue to support development of the standard (working with the appropriate SSO[1])

C. Conduct conferences, meetings, trade show exhibits and plugfests

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[1] SSO = Standards Setting Organization.  This may be an international standards organization such as ISO, IEC, OASIS, IEEE, etc., or in some cases it may be a trade association such as the ZigBee Alliance.

D. Represent the interest of the ITCA members at appropriate events and organizations to promote the standard

E. Develop and maintain a web site for the standard as part of promotion, for listing certified products and for acknowledging sponsors, members and contributors

F. Put in place intellectual property protections – copyrights, trademarks, etc.

## 2.3 Organize the Certification Program

A. Organize the ITCA certifications and determine what organization will act as the Certification Body (actual certifications must be issued by independent 3rd parties which are not the test labs and are accredited to ISO/IEC 65 Guidelines.  The ITCA could become an ISO/IEC 65 certified body and issue certifications of conformance and interoperability itself or contract with such an organization to do so)

   1. Certification bodies (CBs) should be accredited to ISO Guide 65, ***General Requirements for Bodies Operating Product Certification Systems***

   2. Test laboratories should be accredited to ISO 17025, ***General Requirements for the Competence of Testing and Calibration Laboratories***

   3. The ITCA should have an agreement with an accrediting organization(s) to assure that Certification Body and Test Lab accreditation is being performed in accordance with the ITCA program scheme.

B. An ITCA should have a strong relationship with the SSO associated with the standard for the purpose of feedback towards standard improvement and clarification where there may be ambiguities

## 2.4 Define Certification Program (Explicit Tasks)

A. Define the certification program for ITCA applicable products

B. The IPRM **REQUIRES** that product certification be issued by an ISO/IEC 65 accredited third party independent of the testing organization

C. IPRM Version 2 adds an additional REQUIREMENT over and above ISO/IEC Guide 65 -- the independent trusted 3rd party certification authority MUST only allow the statement that products are interoperable only if the products actually demonstrated interoperability during testing. They MUST not assume interoperability from conformance

testing. They MUST demonstrate it before it may be part of the products certification statement.

D. Establish a detailed work program with schedule and resources

E. Determine the business model(s) to be used

    1. Volunteer labor for all activities

    2. Combination volunteer and funded staff: which activities for which

    3. Contractors and/or vendors and labs to implement aspects of the ITCA management and programs

F. Agree on one or more Proforma Implementation Conformance Statement (PICS) or profiles that represent the most likely use cases for products based on the standard

G. Develop the high-level certification test specification based on the PICS

H. Determine who and how detailed test cases, scripts and test harness(es) will be developed and maintained

I. Develop a program overview and applicant preparation guide

J. Define defect tracking and issue tracking requirements for both the technical program and tools and the business functions

## 2.5 Establish Vendor Partnerships (Implied Tasks)

A. Determine philosophy of ITCA management (volunteer or professional)

    1. Develop RFP if professional management is determined

    2. Identify potential ITCA managers and solicit proposals in response to the RFP

    3. Select and develop contract with manager

    4. Manage contract manager activities and set policy

B. Determine if one or more test labs will be required and whether or not the structure needs to be developed to add additional test labs in the future

    1. Develop RFP for test lab(s)

    2. Identify potential test labs and solicit proposals in response to the RFP

    3. Select and develop contract with test lab

      4. Manage contract activities with test lab

      5. Follow guidelines in ISO Guide 65 to insure that Labs are ISO 17025 accredited and maintain accreditation

C. Determine if a separate test tool vendor will be required and whether or not the structure needs to be developed to add additional vendors in the future

      1. Develop RFP for test tool vendor

      2. Identify potential vendors and solicit proposals in response to the RFP

      3. Select and develop contract with test tool vendor

      4. Manage contract activities with test tool vendor

D. Determine if a separate marketing communications vendor will be required

      1. Develop RFP for marketing communications vendor

      2. Identify potential vendors and solicit proposals in response to the RFP

      3. Select and develop contract with marketing communications vendor

      4. Manage contract activities with marketing communications vendor

## 2.6 Implement Certification Program (Explicit Tasks)

A. Define the General Test Policies for the certification program (Section 5.1 of the IPRM V2)

B. Establish test report template, contents and example

C. Develop and maintain a test case reference and modification history list

D. Establish a Common Test Suite Specification (TSS[2] - Section 5.2/3 of the IPRM) if multiple test labs are deployed to test the same standard and / or profile

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[2] A Test Suite Specification (TSS) consists of a suite of tests, categorized into logical functional areas, such as use cases or well-defined features. Each test suite consists of many related test cases corresponding to a particular feature set or use case. Test cases would include both valid and invalid behavior tests. Each test case is further described step-by-step with test procedures and well defined pass / fail / indeterminate criteria, along with references.

E. If required, define common unique test procedures to support the TSS. These should be test tool agnostic

F. Manage the TSS in a well-defined, open and formal manner with change control

G. If there are multiple testing laboratories, put in place processes to avoid quality differences and assure repeatable testing between the laboratories

H. Specify in the test program requirements those features that are mandatory, and those features that are optional (Section 5.4 of the IPRM)

   1. Require and enforce that vendors declare the optional features implemented in a product

   2. If more than one vendor implements the same optional feature in a product, require that future implementations of that optional feature be tested and certified for conformance and interoperability

   3. Define common test cases for optional features that need to be tested as part of the certification program

I. Establish certification programs, terms and conditions of award and re-certification

   1. Maintain a published list of certified products

   2. If a logo is part of the program, create the logo and licensing agreements

J. Determine which components, if any, certified by other industry programs can be "inherited" in product certifications

   1. Develop the procedures for validating that pre-certified components included in program products do not impact interoperability and conformance to the program specification

K. Develop common, well-defined standardized test cases in an open, consensus-driven fashion.  These test cases will be used by all test labs approved by the ITCA

   1. Validate the tests and implement them utilizing validated test tools. Golden reference test equipment may be utilized where appropriate. Define procedures and processes to validate the use of test tools and reference implementations

2. Ensure that test tools have a complete mandatory feature-set coverage of a standard.  In cases where optional features are included in vendor products, incorporate those feature-sets in the test tool

L. Maintain a current and upcoming list of applicable test cases to be called a Test Case Reference List

1. Work with authorized labs to derive a Test Plan from the Test Case Reference List.  Tests shall be identified using the test plan

M. Establish and maintain a revision control system, including revision history, revision numbering, and a defect and expansion management process for all tests in the TSS.

N. Assure that defined product test cases cover application profiles for specific feature sets and functions defined by the specific application profile, and implement interoperability evaluation within that application profile

O. Define interoperability specific testing procedures such as "plug-fests" but also the selection and use of "golden" reference units.  A minimum of two golden units are to be selected

## 2.7  Improvements in the Standard and the Certification Program (Explicit Tasks)

A. Develop and maintain an improvement program for the overall process, the standard documentation itself, test labs, the test and certification program, etc (Section 5.5 in the IPRM).   If possible solicit direct feedback from customers of the certified products to assess that they meet customer interoperability needs

## 2.8  Cyber-Security (Explicit Tasks)

A. The testing and certification program shall ensure that cyber security functional performance requirements are defined, and test cases designed and used to evaluate the requirements

B. The ITCA needs to work with NIST and the SGIP to insure that the technical specification/standard is reviewed for cyber-security issues

C. The ITCA may need to establish a Digital Certificate Program if applicable

D. Determine and implement appropriate security stress testing including static analysis and penetration testing; assure security policy models drive testing; ensure that vendors submit threat analyses as part of

certification process; document programs and standards used for security testing and incorporate component-based cyber security concepts in the testing program.

### 2.9  Governance (Explicit Tasks)

A. Determine whether 1st party testing, 3rd part testing or both is allowed and define the circumstances and process for submission to a certification body (CB) as well as the CB responsibilities

B. Define a corrective process for resolving reported interoperability problems and implement preventative processes to avoid recurrence of such problems.

## 3   Next Steps

An ITCA can move forward in different ways but a logical process could be the following:

A. Review the above Task List and make key decisions on how to develop a formal ITCA and manage it.   The initial key decisions are probably

   1. Whether or not to develop a formal ITCA

   2. Whether or not to set up formal membership and sponsorships in a legal structure for the standard

   3. Whether or not to raise funding to contract with a manager

   4. Whether or not to develop all of the artifacts with volunteer labor or raise funding to contract with appropriate vendors

   5. Whether or not to operate a formal 3rd party certification program or use a self-certification program

   6. Whether or not to contract with an independent test lab for certifications (depends on above)

   7. Whether or not to take on the marketing aspects of promoting the standard and certified vendor products

   8. What are the organizational requirements that would be needed to implement the key decisions

   9. How much funding would be required and how best to pursue it

B. Based on the key decisions above, develop a formal or informal request for proposal to solicit proposals for operating an ITCA as envisioned. An RFP should consider issues such as organizational structure, funding

models, project schedule, marketing activities and contracting activities as needed.

C. Depending on the above determination, solicit additional responses to the ITCA RFP.

# 4 FAQs

The SGTCC has also generated a Frequently Asked Questions (FAQ) on ITCA development and implementation of the IPRM. These have been compiled based on inquiries received by the SGTCC and may be useful for ITCAs to use in their program development, providing efficiency through the questions and lessons learned by prior ITCA developers.

**What is the IPRM?**

A: The IPRM is a guide of how to start up a Test program or ITCA and includes best practices.  It also includes guidelines for labs and certification bodies which the ITCA will be using.

**What is the role and purpose of an ITCA?**

A:  An ITCA is responsible for developing and maintaining the certification program requirements (CPRs), which include the IPRM best practices.  The CPRs address all aspects for certification of products and systems with respect to interoperability associated with the standards, specifications or profiles referenced in the CPRs.

**How is the IPRM used to become an ITCA?**

A:  Any entity or group may become an ITCA by developing and maintaining a certification program which fills a Market need.  The IPRM is not "used to become an ITCA" but rather an ITCA implements IPRM best practices in order to facilitate long term interoperability improvements and provide consistency between TLs and CBs.

**Does the CB need to be separate from the TL?**

A:  Yes.  The certification decision; based on review of processes, documents and test data specified by the ITCA certification program requirements; must be made by persons independent of those responsible for the materials being reviewed.  A single entity/organization/company might perform both CB and TL functions, but those functions must be separate, and the CB decision must not be influenced by any relationships between the CB and TL functions.

**Can there be more than one ITCA for a standard?**

A:  Yes.  This may not be ideal, but there is no provision in NIST or the SGIP preventing multiple ITCAs.  The Market will determine which ITCA programs are accepted.

**Is implementation of the IPRM mandatory?**

A: No. IPRM implementation is voluntary. The SGTCC recommends implementation of IPRM best practices as one means to enhance Smart Grid interoperability.  The SGTCC encourages purchasers of the SG Products to only purchase from vendors whose products have been certified under such an ITCA program that implements the IPRM.

**What are the benefits of an ITCA following the IPRM?**

A: It is the SGTCC view that IPRM implementation will 1) Standardize the testing and certification best practices and processes across the many diverse Smart Grid related standards and programs to ensure more consistency and quality in interoperable Smart Grid systems and devices, 2) Help assure end user purchasers of Smart Grid products that they have been assessed through quality and audited programs, enhancing buyer confidence in purchasing decisions, and 3) provide cost savings and shorten product implementation cycle time through the use of products that have been assessed within these programs.

**How does an ITCA select a TL and CB?**

A: Selection of a TL or CB is a business decision of the ITCA. The TL and/or CB must be appropriately accredited (e.g. ISO 17025/ISO Guide 65) for the scope of services applicable to the ITCA program, in order to meet the IPRM recommendations. It is up to the ITCA on how to manage their selection process. The SGTCC recommends an open recruitment process to provide the ITCA with a broad view of potential TLs/CBs that can fulfill the need. An open process also encourages cost effectiveness

through competition. However the ITCA may opt for a direct sourcing approach or even a "lead lab" approach where the ITCA feels those approaches better meet their needs.

**What is the purpose of the audit checklists for testing laboratories and certification bodies?**

A: The SGTCC has produced and made available several tools to aid ITCAs, TLs, and CBs in their IPRM implementation process, including checklists. Checklists for ISO Guide 65 and ISO 17025 are also available both in the public domain, as well as through companies specializing in support services for those areas. These checklists are meant to provide guidance and assistance to organizations in their implementation process.

**How does the ITCA validate its testing and certification program?**

A: The ITCA can work with accreditation organization to assure that their labs and certifying bodies have successfully achieved accreditation to the appropriate ISO standards. In addition, the ITCA may choose to include additional elements in their program scope that can be a part of the accreditation process. When the ITCA feels that it has the IPRM recommendations implemented within their program, they can make an application to the SGTCC requesting a review of their IPRM implementation. The ITCA should minimally have an accredited test laboratory before making application. The SGTCC review will result in posting on its website stating either 1) full conformance to the IPRM, or 2) accredited test laboratory and partial IPRM conformance. The ITCA will not be added to the SGTCC website in the absence of an accredited laboratory.

**Does my ITCA, labs, certifiers need to be members of the SGIP?**

A: Currently there are no requirements that the ITCA, test labs or certifiers be SGIP member companies – however membership and active participation is encouraged to help in the continuous improvement of the SGTCC programs and tools. It is not known at this point if membership requirements may change with the transition of the SGIP to a primarily industry funded organization.

**I would like to be offer ITCA services for a particular standard --- do I need permission from the standards body, SGIP, or other organization to launch this effort?**

A: There are no SGIP or IPRM requirements mandating permissions for anyone to launch and operate an ITCA, nor do standards bodies typically have any such requirements. A successful ITCA will usually need to be engaged with a standards activity and be addressing an industry demand in order to meet its business objectives and be financially viable. Ultimately, the success or failure of an ITCA is dependent on the market and the ITCA's ability to fulfill a market need.

**What is the SGIP/SGTCC role in recognizing my ITCA?**

A: The SGIP/SGTCC is not an official industry accreditation organization. Formal accreditation of ITCA labs and certifiers is handled by organizations that are industry recognized in provision of those services. The SGTCC includes a committee that reviews ITCA applications that detail accreditation status and ITCA declaration of conformance to IPRM recommendations. These reviews determine the sufficiency of the application for inclusion on the SGTCC listing of ITCAs and the level of listing to be cited on the SGTCC website. The listing is maintained as a service and reference, and should not be construed as an approval or endorsement by the SGIP.

**Does SGIP charge a fee for ITCA reviews/listings?**

A: Currently the SGIP does not charge a fee for ITCA reviews and website postings. These are a part of the volunteer contributions to the SGIP and SGTCC. It is unknown at this point if the SGIP business model relative to ITCA reviews may change with the transition of the SGIP to a primarily industry funded organization, however any such changes relative to the ITCA relationship are subject to vote by the SGIP membership (thus membership by ITCAs and their TLs/CBs is encouraged).

**Does the SGTCC provide guidance on developing sufficient and testable requirements?**

A: The first version of the IPRM issued in late 2010 provided a substantial amount of information about recommended best practices for test programs. These details were separated out of IPRM V2 so that document could focus on ITCA operational

issues. There has been increased interest in test structure guidelines and the SGTCC is considering this subject for its 2013 work program.

**How should an ITCA go about developing tests that are sufficiently meaningful, yet not so rigorous such that the tests dissuade participation?**

A: The sufficiency of a test program to meet an industry need is driven by market acceptance. In the absence of desired information, the existence of an industry program is better than none. However the value of the program and data will be determined by the value it has to end customers. It is recommended that ITCAs work very closely with all stakeholders, from vendors, to utilities to end customers to build a consensus program that is adequately addressing the key concerns and expectations from the affected stakeholders.

**What is the business model for testing, especially if there is no regulatory body that requires certification and the users do not require certified products?**

A: Testing and certification programs require demand drivers to be successful. Market driven demand is preferred as it conveys the importance of a program to industry. Regulatory requirements for testing are another form of demand. In the absence of either market or regulatory demand, ITCA programs may still be valuable to certain end users to meet their needs. This is a business decision for end users, as well as for ITCAs exploring IPRM implementation. The SGTCC believes that test programs become stronger and more valuable through thebbbbbb adoption of the IPRM recommendations, but acknowledges that needs and demand will vary for each program.

**Why does the IPRM recommend an "arms-length" relationship between SSOs, CBs, TLs, ITCAs, etc.?**

A: The IPRM adopts common practices used in the accreditation/certification field that provide for checks and balances in the certification process to help assure neutrality and unbiased evaluations. Using an independent certification authority to review/approve the results presented by a test lab instills greater confidence in a certification mark via these secondary checks. An ITCA has the option of contracting for the CB function or providing that function themselves (in which case the ITCA will be subject to ISO Guide 65 accreditation as for any CB). Depending on how the program is structured, there can be additional associated costs with this approach, however the value and trust in the certification mark is significantly enhanced.

## Additional FAQs from WG8 webpage

## A.  Relationships between SSO, ITCA, CB, TL

**Does the SSO have to have an ITCA?**

A:  No.  An ITCA forms to fill a market need relating to a certification program related to an SSO standard, specification, or other defined criteria relating to interoperability.  An ITCA may be associated with an SSO, or it may be independent of an SSO.

**Does the ITCA need to be separate from the SSO?**

A:  No.  The SSO can establish a certification program related to its publications, thereby acting as an ITCA.

**Does the ITCA need to be separate from the CB?**

A:  No.  A CB may establish a certification program related to an SSO publication, thereby acting as an ITCA.

## B.  Recognition and Accreditation

**Does the ITCA have to be recognized or accredited?**

A:  No.  The suitability or acceptance of an ITCA certification program (and the related testing and certification functions) is determined by the market (users, specifiers, system integrators, etc.).  The SGTCC encourages an ITCA to implement the IPRM, and the SGTCC encourages purchasers of the SG Products to only purchase from vendors whose products have been certified under such an ITCA program.

**Does the SGTCC certify ITCA compliance to the IPRM?**

A: No. The SGTCC does not certify ITCAs, but does encourage that ITCAs implement the IPRM.

**Is ISO Guide 65 accreditation required for CB?**

A:  Yes, the SGTCC IPRM requires an ITCAs CB to be ISO 65 accredited.

**What is the reason for ISO accreditation (of CB and TL functions)?**

A:  Accreditation provides confidence in the competence and management of activities that support product certification.

**Does the ITCA need ISO accreditation?**

A:  Currently there is no ISO accreditation system applicable to an ITCA certification program.  However, the CB and TL functions should be accredited to applicable ISO management system standards.

**If a TL or CB has accreditation from a particular accreditation body (AB), and it wishes to expand its accreditation to an area unique to an ITCA program, will the ITCA permit a scope expansion from the existing AB, or would the new scope need to be completely reassessed by the AB specified by the ITCA?**

A:  AB's participating in a multilateral agreement or mutual recognition arrangement should give credence to accreditation from others in the program, but each AB typically determines the extent to which another AB program can be applied to its own accreditation activities.

**C.  Conditional Membership**

**Can the ITCA require membership in an organization as a requirement for testing or availability of test data/test suite?**

A:  Yes.  An ITCA develops and owns a certification program, which in turn specifies the interactions and expectations of the submitter (client), TL and CB functions.  The ITCA legal and business structure is a business decision of the ITCA and will depend on the standard and destination market place.  The ITCA can require membership (subscription, etc.) for clients to obtain standards/specifications or test data/test suites; and to reimburse development of or protect intellectual property. The SGTCC advocates that ITCA business structures be as open and inclusive as possible, non-discriminatory with regards to participation, and without restrictive conditions on test specification availability to help promote broad industry engagement in implementing interoperable systems, while recognizing business needs to maintain a financially sustainable testing and certification program.

**Can the CB require membership in an organization as a requirement for certification?**

A:  No.  Not if accredited to ISO Guide 65.  ISO Guide 65 precludes the CB from requiring membership as a condition for issuing certification.

## D.  Certification and testing scope

**What is a "product certification scheme" or "product certification program?"**

A:  From ISO Guide 67 (Conformity assessment — Fundamentals of product certification) the following definitions apply:

> product certification system - rules, procedures and management for carrying out third-party product conformity assessment

> product certification scheme - product certification system related to specific products to which the same specified requirements, specific rules and procedures apply

**What is a suite specification?**

A:  Attribution to European Telecommunications Standards Institute:
- A Test Suite Structure is a logical division of the test suite into Test Groups. The Test Suite Structure provides the categories into which both Test Purposes and Test Cases are placed.
- An Interoperability Test Case is the detailed set of instructions (or steps) that need to be taken in order to perform the test.
- An interoperability test suite is the collection of test cases designed to prove the ability of two (or more) systems to interoperate.  The test cases are organized in a hierarchy by the Test Suite Structure.

**Can you have a certified interoperable product and not address cyber-security?**

A:  Yes.  The scope of the certification must be clearly stated, and the absence of reference to cyber security requirements would indicate that cyber security aspects are not addressed by the certification.

**Can you have a certified secure product and not address interoperability?**

A:  No.  Some cybersecurity implementations will break interoperability, yet a product can be interoperable and not have any security implemented.  So when certifying a product for cybersecurity, additional testing should be completed to ensure the interoperability has not been broken.  Certification of cybersecurity without including the communication interoperability would not be useful in the Market.

**Are there common criteria developed for response mechanisms to EMI which relates to the immunity of products located in various RF environments?  For example, generic Performance Criteria A, B & C are referenced in IEC immunity standards.**

A: Yes.  These criteria have to be determined for each specific product that is in the end to end path for SG communications.   The test method to determine if these criteria are met is contained in specific immunity test standards as published by the IEC.  Note:  Test levels depend on the specific RF environment and hence are variable depending on the type of test performed and the impact of which RF environment is being assessed.

**E.  IPRM implementation**

**Can end purchasers or other stakeholders mandate compliance to the IPRM recommendations?**

A: Yes.  Requiring IPRM compliance is an individual business decision for each end user based on their specific needs and circumstances.

**What are the ramifications on a smart grid standard if its ITCA is not following the IPRM?**

A:  An SSO is not obligated to have a corresponding ITCA.  It is an end user/market decision on requiring an ITCA to operate its program incorporating IPRM recommendations. It is an SGTCC view that minimally, that SSOs and associated ITCAs should have in place mechanisms to provide feedback to the SSO.  If the ITCA

does not facilitate improvement of the SSO document(s), then inconsistent and incomplete requirements will be applied in the design, testing and certification of products.  Close coupling between the ITCA's and the SSO's should provide long-term improvements in product/system interoperability.

**What will happen if the ITCA does not follow the IPRM?**

A:  Implementation of the IPRM is voluntary.  If an ITCA chooses not to implement it, the ITCA cannot claim that it is following SGIP recommendations.

**How can end purchasers or other stakeholders be confident that the IPRM is implemented in an ITCA certification program?**

A:  The Market would need to accept the ITCA's own declaration that the IPRM is implemented in its certification program.  In the absence of any oversight of the ITCA with respect to IPRM implementation, it must be the Market that ultimately accepts the ITCA Program.  An ITCA and its Program may be assessed for IPRM implementation by product users.

## 5   Document References

[1] UCA International OpenADE Task Group, Interoperability Test and Certification Management Assistance Analysis, December 2011

[2] SGTCC Interoperability Process Reference Manual (IPRM), Version 2, January 2012

[3] ISO 17025 - General requirements for the competence of testing and calibration laboratories

[4] ISO Guide 65 - General requirements for bodies operating product certification systems

## 5.1   Revision History

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| Rev. Number | Date | Author/Editor | Summary of Revisions |
|---|---|---|---|
| 0.1 | 10/4/2012 | Mater/Schubert | First Draft for SGTCC review |
| 0.9 | 11/6/2012 | Mater/Schubert | Final Draft for SGTCC approval |
| 1.0 | 11/19/2012 | Mater/Schubert | Final – Version 1.0 |
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## 5.2   Contributors

This document was developed based on previous work performed by Quality Logic (James Mater) for use by OpenADE in the development of their ITCA program.

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